

Appl. No. 09/560,673
Amdt. dated 3/3/2004
Reply to Office Action of 12/03/2003

REMARKS

This Amendment is in response to the Office Action mailed 12/03/2003. In the Office Action, the Examiner objected to claims 3, 11, 12, and 16, and rejected claims 13, 14, and 34-36 under 35 U.S.C. § 112, rejected claims 1-11, 13, 14, 23-31, and 37 under 35 U.S.C. § 103, and indicated allowable subject matter in claims 12, 15-22, 32, and 33. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

Claim Objections

1. The Examiner objects to claims 3, 11, 12, and 16 because of noted informalities. Applicants have amended these claims as suggested by the Examiner and respectfully requests that the Examiner withdraw the objection to claims 3, 11, 12, and 16. Claim 33 has been amended to replace "the packet buffer number and switch instance" with --the packet buffer number and the switch instance-- to clarify the antecedent basis.

Rejection Under 35 U.S.C. § 112

3. The Examiner rejects claims 13, 14, and 34-36 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 13 and 14, the Examiner considers that there is insufficient antecedent basis for "the shared buffer memory." Applicants have amended claim 13 to depend from claim 11 to provide antecedent basis.

Regarding claim 34, the Examiner considers that there is insufficient antecedent basis for "the forwarding information." Applicants have amended claim 34 to depend from claim 33 to provide antecedent basis.

Claim 35 is rejected for being dependent on rejected base claim 34. Claim 34 has been amended.

Regarding claim 36, the Examiner considers that there is insufficient antecedent basis for "the ingress port controller." Applicants respectfully point out the recitation of "an ingress port controller" as part of "requesting packets." Applicants have amended claim 36 to correct the informality of "requesting packets form the shared-memory switch fabrics" by replacing "form" with --from--.

Applicants respectfully request that the Examiner withdraw the rejection of claims 13, 14, and 34-36 under 35 U.S.C. § 112, second paragraph.

Rejection Under 35 U.S.C. § 103

5. The Examiner rejects claims 1-11, 13, 14, 23-31, and 37 under 35 U.S.C. § 103(a) as being unpatentable over Szczepanek et al. (US 6,621,818).

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Regarding claims 1, 29, and 37, the Examiner asserts that Szczepanek teaches a network switch having a hybrid switch architecture, comprising: at least two shared-memory switch fabrics (citing 20₀-20₂ of FIGS. 3 and 4a). Applicants respectfully disagree.

Applicants understand the cited elements 20₀-20₂ of Szczepanek to teach a port controller and not a switch fabric. As shown in FIG. 4a and described at col. 6, lines 11-67, the switches 20 provide eight 100-Mbit/sec ports, ports 0 through 7, and a gigabit port, port 8. Each of the 100-Mbit/sec ports includes a media independent interface (MII) 41 and a media access control (MAC) 42. One of ordinary skill in the art would clearly recognize the described switch to be a port controller and not a switch fabric because the architecture is adapted to be connected to a media port and is not adapted to provide NxN switching.

FIGS. 12 and 14 show sixteen switches 20₁-20₁₆ connected to an 8x8 crossbar switch fabric 100. Each of the switches 20 is connected to the crossbar switch fabric 100 by the gigabit port 8. Col. 23, lines 6-8. The Examiner asserts that Szczepanek teaches the crossbar switch fabric being coupled to each of the shared-memory switch fabrics and configured to distribute and re-collect packets to and from each of the shared-memory switch fabrics, citing col. 23, line 1, through col. 27, line 54. The Examiner does not explain how Szczepanek teaches that the crossbar switch fabric is configured to provide packet distribution and re-collection. Applicant fails to understand the cited portion of Szczepanek as teaching anything more than the use of a port switch to multiplex port inputs and thereby reduce the number of channels required in the crossbar switch fabric that connects the ports.

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness because Szczepanek does not teach or suggest all the claim limitations.

Regarding claim 2, the Examiner asserts that Szczepanek teaches the shared-memory switch fabric is a NxN shared-memory switch fabric, N being an integer greater than 1, and wherein each shared-memory switch fabric includes N inputs for receiving packets and N outputs for sending packets on N channels and wherein at least one channel is coupled to each crossbar switch fabric. The Examiner asserts that port 8 of the switch of Szczepanek teaches the at least one channel coupled to each crossbar switch fabric. The Examiner overlooks that at least two crossbar switch fabrics are claimed and the switch of Szczepanek provides a single gigabit port 8. Nothing in Szczepanek teaches or suggests a switch having two or more gigabit ports as would be needed to couple to each of at least two crossbar switch fabrics.

Regarding claims 3 and 28, the Examiner asserts that Szczepanek teaches the crossbar switch fabric is a nxm crossbar switch fabric, n being an integer and m being an integer greater than one, and wherein each nxm crossbar switch fabric is coupled to n ports for receiving and transmitting packets from and to network ports and m channels for distributing and re-collecting packets to and from the NxN shared-memory switch fabrics, and wherein at least one of the m channels is coupled with each NxN shared-memory switch fabric. The Examiner provides no justification for this assertion. The Examiner appears to take the position that gigabit port 8 of the switches of Szczepanek provide both the coupling to n ports and to the m channels. Nothing in Szczepanek teaches or suggests that the switches can receive and transmit packets on port 8 in a manner that would permit packet distribution and re-collection.

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Regarding claims 4-10 and 26, applicant relies on the patentability of the claims from which these claims depend to traverse the rejection without prejudice to any further basis for patentability of these claims based on the additional limitations recited.

Regarding claim 25, the Examiner remarks that the numerical parameters are presumptively within the ordinary skill in the art. Applicants respectfully point out that claim 25 is an independent claim having limitations that correspond to the limitations of claims 1, 29, and 37 discussed above in addition to additional numerical limitations. Applicants traverse the rejection of claim 25 for the same reasons as discussed above for claims 1, 29, and 37.

Regarding claim 11, Applicants relies on the patentability of the claims from which this claim depends to traverse the rejection without prejudice to any further basis for patentability of this claim based on the additional limitations recited.

Regarding claims 13, 14, 27, and 31, Applicants respectfully submit that Szczepanek does not teach or suggest a shared-memory switch fabric as discussed above and therefore cannot teach or suggest the further elements related to a shared-memory switch fabric as claimed.

Regarding claim 23, Applicants rely on the patentability of the claims from which this claim depends to traverse the rejection without prejudice to any further basis for patentability of this claim based on the additional limitations recited.

Regarding claim 24, Applicants rely on the patentability of the claims from which this claim depends to traverse the rejection without prejudice to any further basis for patentability of this claim based on the additional limitations recited.

Regarding claim 30, Applicants rely on the patentability of the claims from which this claim depends to traverse the rejection without prejudice to any further basis for patentability of this claim based on the additional limitations recited.

Applicants respectfully request that the Examiner withdraw the rejection of claims 1-11, 13, 14, 23-31, and 37 under 35 U.S.C. § 103(a) as being unpatentable over Szczepanek.

Allowable Subject Matter

7. Applicant notes with appreciation the Examiner's indication of allowable subject matter. The Examiner objects to claims 12, 15-22, 32, and 33 as being dependent on a rejected base claim, but indicates that the claims would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In view of applicants' remarks above, applicant respectfully submits that the base claims from which these claims depend are allowable and applicant has not rewritten these claims in independent form.

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Conclusion

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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